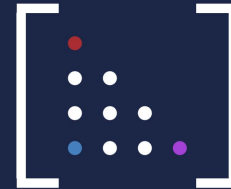# DS@LSE
Give It A Go

Wed 30/09/2020 14:00 - 15:00 BST

LSESU
DATA SCIENCE SOCIETY

House Rules

Please **use your name** as your Display Name

Have your **video turned on** for a more engaging event

Have your **microphone muted** when you are not speaking to avoid disruptions

Agenda

- **Our mission**
  - What is data science and why should you care?
  - Data Science for your career
  - How do I get started?
- **What do we do?**
  - Community
  - Events
  - Projects
- **How can you get involved?**
  - Subcommittee recruitment!
  - Projects signup
  - Upcoming events
- **Welcome Survey - win Amazon gift cards!**
- **Q&A**

LSESU
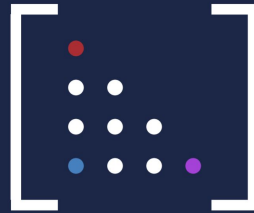**DATA SCIENCE
SOCIETY**

Our mission

LSESU
DATA SCIENCE SOCIETY

LSESU Data Science Society

Reborn in 2020, expanding focus on Data Science and tech in general

1. Build a data science community at LSE
2. Expose LSE students to data science and its potential
3. The third way : careers beyond just investment banking / consulting

What is Data Science and why you should care

Statistics

+

Computer Programming

+

Domain Knowledge (Business, Finance, Social Sciences)

↓

To derive meaning and insights from data

↓

To inform decisions and solve problems

What is Data Science and why you should care

Some trends:

- **<u>Big Data</u>**

Massive amounts (millions, billions) of data enabled by increased computing power, internet of things, social networks.

- <u>Machine Learning</u>

Model "learns" a set of rules or a relationship from data for a given task

- <u>Deep Learning</u>

Representation learning using neural networks that will help with a given task - lots of advances towards **Images (Computer Vision) and Text (Natural Language processing)**

- Reinforcement learning, Artificial Intelligence
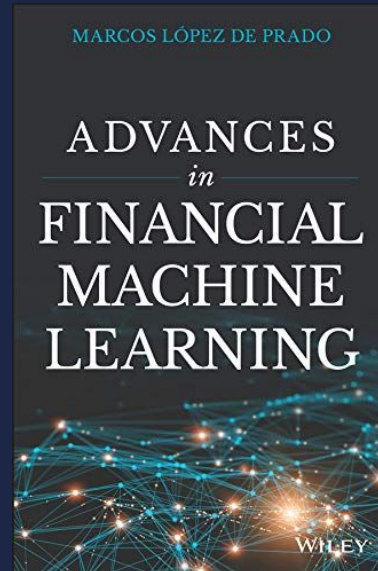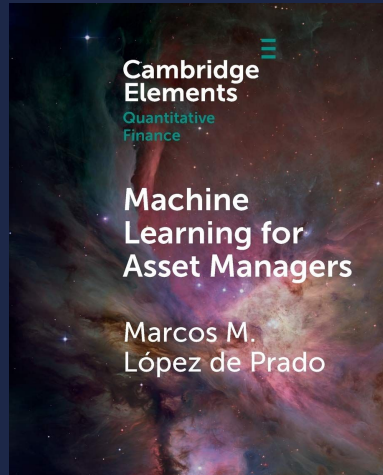
However

- 'Small' data matters as well.
- <u>Data visualisation</u> is important.
- How to collect, store, and manage data is really important! (data engineering).
- OLS / Regression is a powerful tool

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Careers in Data Science

- Technical roles:
  - Data Analyst/Business Analyst - analyse data to inform business decisions. Skills: SQL, Data Visualisation (Tableau), Excel
  - Data Scientist/Machine Learning Engineer - analyse data and build machine learning models. Skills: Python/R, Machine Learning, Deep Learning
  - Data Engineer/Database Administrator - build systems to transform and manage data. Skills: SQL, Hadoop/Spark, Cloud (AWS/GCP)
  - Software Engineer/Developer - productionise models
- However... **General programming / problem solving / data analysis skills**
- Many fields USING data science / programming, interdisciplinary skills!
  - Marketing
  - Product Management
  - Economics, Social Sciences
  - Finance (quant research, investment bankers)... and many more

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Data Science and Finance

- "Quants" were the OG "data scientists"- analyse large amounts of data using statistical techniques
    - Advances in Financial Machine Learning & Machine Learning for Asset Managers, Lopez de Prado
    - Machine Learning in Finance - Dixon, M.F., Halperin, I., Bikolon, P.

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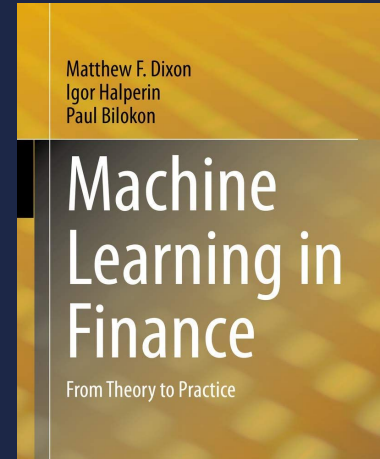
Data Science and Economics

- Economists analyse data to answer research questions
- However... Causal Inference and Econometrics - LSE students benefit w.r.t - understanding the causes of things!
- Some tricks from data science making its way e.g. Econ & Machine Learning
  - Machine Learning Methods Economists Should Know About - Susan Athey et al.
  - Big Data: New Tricks for Econometrics - Hal Varian

IDEAS MADE TO MATTER | ARTIFICIAL INTELLIGENCE

Why a leading economist is embracing machine learning

by Edward Mason | Oct 29, 2018

Machine Learning Methods Economists Should Know About[*]

Susan Athey[†]   Guido W. Imbens[‡]

March 2019

Abstract

We discuss the relevance of the recent Machine Learning (ML) literature for economics and econometrics. First we discuss the differences in goals, methods and settings between the ML literature and the traditional econometrics and statistics literatures. Then we discuss some specific methods from the machine learning literature that we view as important for empirical researchers in economics. These include supervised learning methods for regression and classification, unsupervised learning methods, as well as matrix completion methods. Finally, we highlight newly developed methods at the intersection of ML and econometrics, methods that typically perform better

Data Science and Social Sciences

- Psychologists, Political Scientists, Social scientist users and analysis of data - Social Data Science
- Ability to quantify things that wouldn't have been possible before - such as text! (Natural Language Processing), networks
- LSE's Department of Methodology - Kenneth Benoit and others, quanteda

Light-hearted Examples

- **Or you can just mess around….**
- Experience how artificial intelligence judges your face - https://www.hownormalami.eu/
- **Magenta Tensorflow Lo-Fi player:** https://magenta.github.io/lofi-player/
  - **Combining music styles to generate chill beats using Tensorflow**
- **CartoonGan:**
  https://leemeng.tw/generate-anime-using-cartoongan-and-tensorflow2-en.html
  - **Turn images into 'anime style'**
- **Style Transfer** https://reiinakano.com/arbitrary-image-stylization-tfjs/
  - Turn images into painting; combining style
- Some more:
  - https://experiments.withgoogle.com/collection/ai
  - https://www.tensorflow.org/js/demos

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How to get started (in Data Science)?

- Join the society 😂
- Learn 1+ programming languages (Python/R); how to manipulate data. See: https://dsatlse.github.io/resources/programming-languages/
- Learn some theory; statistics
- Work on projects and problems you're interested in
- Get some work experience.
- See: https://dsatlse.github.io/resources/careers/

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What do we do?
(And why you should join us)
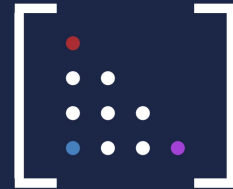
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**DATA SCIENCE
SOCIETY**

Be part of an inclusive and supportive learning community

- Want to build a **community**, especially since MT might be remote
- **Facebook Group / Zulip** (you will get an email with the links)
- Ask anything - **helpdesk**
- We welcome, **support** and provide opportunities for members at every stage of their data science journey - through learning, doing projects, joining datathons and applying for internships

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Opportunities on Zulip

- **Many opportunities are advertised on Zulip, so be sure to sign up!**
- **Roles for a wide variety of industries and experience level**
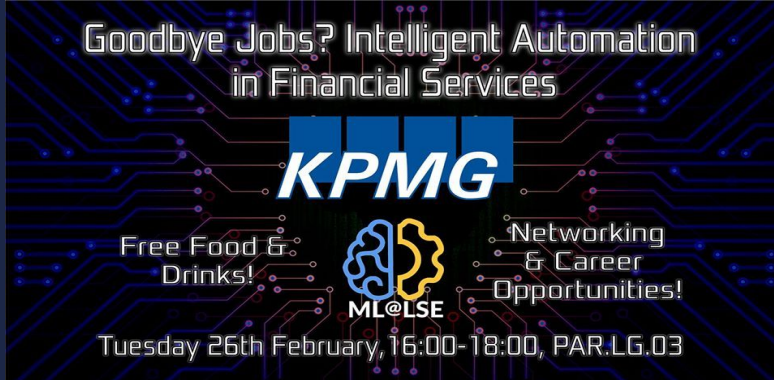 - **external internships, talks, hackathons**

Name of event	Type of event
💥 LSE Generate - Coding Bootcamp for LSE Women!	WORKSHOP
💥 LSE - Coffee Morning: Careers in Technology	TALK
💥 LSE - Coffee Morning: Careers in Technology	TALK
💥 Bank of America - EMEA Virtual Recruitment Event: Shaping the New World of Technology	TALK
💥 Goldman Sachs - Virtual Fall Sessions - Tech Talks @ GS	TALK
💥 Goldman Sachs - Virtual Fall Sessions - HackerRank Hacks	TALK
💥 Goldman Sachs - EMEA Divisional Insight Series: Engineering	TALK
💥 Goldman Sachs - Virtual Fall Sessions - HackerRank Hacks	TALK
💥 LSE - Careers with a Mathematics or Statistics degree panel and Q&A	TALK
💥 Deeplearning.AI - GANS for Good	TALK
📈 Truecue - Women in Data Hackathon	HACKATHON/CHALLENGE
💥 - The 3rd Women in Quantitative Finance Conference (WQF)	TALK
💥 Women in Tech York - Code your way out of a paper bag using Genetic Algorithms	TALK

Past Events

ARTIFICIAL INTELLIGENCE

AT EY

WEDNESDAY OCTOBER 9TH
18:00 - 19:30   NAB.2.13

ML@LSE

Goodbye Jobs? Intelligent Automation in Financial Services

KPMG

Free Food & Drinks!

Networking & Career Opportunities!

ML@LSE

Tuesday 26th February, 16:00-18:00, PAR.LG.03

Machine Learning
Workshop:
Tobit Modelling,
a Machine Learning Approach
Thursday 24th Oct., 17:00 - 18:00
OLD.3.24

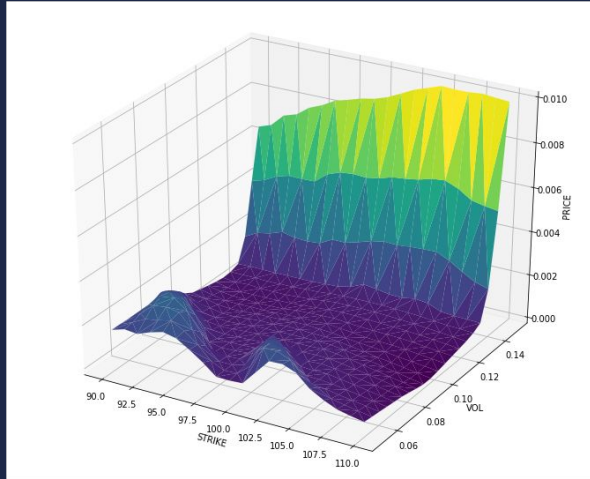NEURAL
NETWORKS
FOR
FINANCE
(BEGINNERS)

all welcome!

LSESU
MACHINE
LEARNING

Wednesday
12th Feb.
6pm
NAB.1.18

- **Speaker Events**
- **Workshops (beginner and intermediate)**
- **dsatlse.github.io/events/2019**
- **facebook.com/dsatlse**

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Past Projects

- Data science projects - predicting stock prices, property tech
- **https://dsatlse.github.io/projects/2019/**

How can I get involved?

Join the Team - Organisational

I am interested in data science and technology and want to learn more, and I want to develop business/ society management skills.

- **Events** - Plan and deliver weekly speaker events and termly socials
- **Marketing -** Design creative promotional materials and run marketing campaigns
- **Partnerships -** Liaise with industry professionals to secure speakers and sponsors

Time commitment for all subcommittees: 4-5 hours per week

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Join the Team - Technical

I am interested in data science and technology, but am most interested in understanding theory, developing solutions and building my portfolio.

- **Education -** Produce educational materials and run workshops to expose LSE students to data science applications
  - Requirements: familiar with Python/R and knowledge of data science
- **Engineering -** Create tech tools and frameworks to support the society's activities
  - Requirements: familiar with programming, problem solving, web dev nice to have
- **Projects -** Work in teams to develop an end-to-end machine learning solution to a real-world problem
  - Requirements: familiarity with Python, data science nice to have

Time commitment for Projects and all subcommittees : 4-5 hours per week

Meet the Committee!

https://dsatlse.github.io/about/

CHRIS CHIA
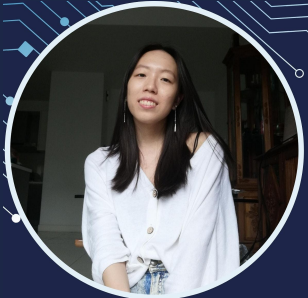(PRESIDENT)

ZHEN YEN
(VICE PRESIDENT)

ELDRIC LEM
(TREASURER)

RAFAY BUTT
(SECRETARY)

PEARL YUAN
(HEAD OF INTERNAL RELATIONS)

RACHEL SOH
(CO-HEAD OF MARKETING)

HAJNI NGUYEN
(CO-HEAD OF MARKETING)

MAJA LIE
(HEAD OF EDUCATION)

KONSTANTY KOWALEWSKI
(HEAD OF ENGINEERING)

CHAN MUN FAI
(HEAD OF PROJECTS)

Subcommittee Applications

- **Recruiting for:**
  - **Events** (4)
  - **Marketing** (4)
  - **Partnerships** (6)
  - **Education** (3) + 1 Head of Education
  - **Engineering (2)**

    *inviting project applicants who have appropriate skills to Education/Engineering as additional opportunity.
- **Application form: https://link.kszk.eu/subcomsignup**
- **Details on FB: https://www.facebook.com/dsatlse**
- **Email / message if any questions**
- **Deadline: 9th October, 6.30pm BST**

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Projects Application

- 4 projects currently available
- Apply here: https://link.kszk.eu/projectsignup
- Details on Facebook:
  https://www.facebook.com/dsatlse/posts/688539165085634
- Deadline: 9th October 2020, 6.30pm BST
- Also looking for more experienced applicants to become Project Managers, see
  https://www.facebook.com/dsatlse/posts/694959371110280

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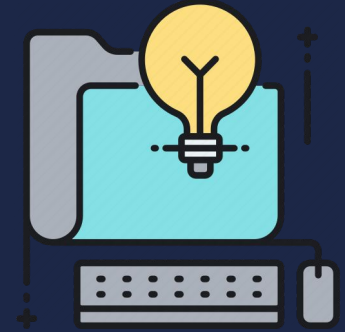
Upcoming Events

- **Events**
  - Data Science in Retail Banking with NatWest Group
  - Statistical Aspects of Educational Testing with Dr Yunxiao Chen
  - Tech Internship Panel

- **Workshops**
  - Data Storytelling for COVID-19 - how to visualise data in Python
  - Python for MA - how to use programming for MA (linear algebra, calculus), and the gradient descent algorithm, a key algorithm in machine learning
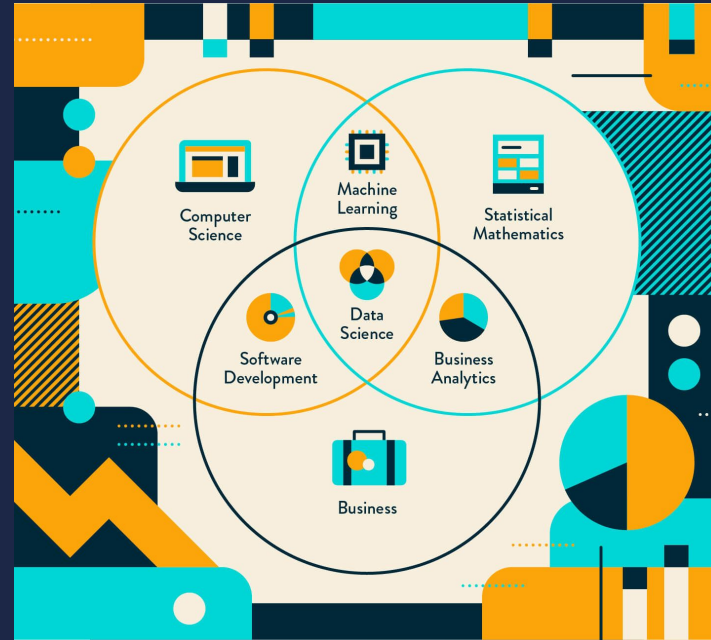
- **Flagship Event** - **Save The Date!**

  - **Data Science Bootcamp - 14-15th November, Virtual**

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5 Reasons to Join LSESU Data Science Society

★ **Events**

★ **Workshops**

★ **Projects**

★ **Subcommittee**

★ **Community**

Computer Science

Machine Learning

Statistical Mathematics

Software Development

Data Science

Business Analytics

Business

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Next Steps

1. **Become a member:** https://link.kszk.eu/dssmembership
2. **Welcome Survey (5x£10 amazon vouchers + tell us what you want!)** : https://link.kszk.eu/welcomesurvey
3. Follow us on social media!

Facebook: https://www.facebook.com/dsatlse/

Instagram: @dsatlse

Website: https://dsatlse.github.io/

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Q&A

Type your questions in the Chat

or use the 'Raise Hand' function